

Pending Claims, As Amended

(Clean Copy)

1. A locking device for pipe connections, the locking device comprising:

a first and a second connection unit which are threaded and include a female and a male threaded section, respectively, where the connection units are configured to be screwed together to form a pipe connection;

a first and a second locking ring disposed between the first and second connection units and concentric with the pipe connection, each locking ring having a first and a second side; and

an axial lock configured to prevent the first and second locking rings from moving towards each other in an axial direction when engaged;

characterized in that the first and second side of each of the locking rings each comprise a plurality of teeth separated by intermediate notches, such that the teeth and notches on the first sides of the first and second ring are configured to engage each other; and the teeth and notches on the second sides of the first and second rings face the first and second connection units, respectively, and are configured to engage a corresponding number of notches and teeth formed on a shoulder of a facing edge of their corresponding connection units, the number of teeth and notches on the second side of the first ring being different from the number of teeth and notches on the second side of the second ring;

so that upon screwing together the first and second connection units, the first and second locking rings may be revolved together to a position in which they may be spread partially apart in an axial direction to engage the second sides of the locking rings with their corresponding connection units and, at the same time, maintain the mutual engagement between the first sides of the first and second rings, so that when the axial lock is engaged to maintain the separation between the first and second locking rings, rotation between the first and second connection unit is prevented.

2. The locking device according to claim 1, characterized in that the locking rings are arranged to slide rotationally and axially on the connection units while remaining disposed concentrically on the pipe connection.

3. The locking device according to claim 1, characterized in that the locking rings are provided with teeth that have parallel flanks, and notches with slanted sides at the sides facing the connection units.

4. The locking device according to claim 1, characterized in that the connection units are provided with teeth with slanted flanks, and notches with parallel sides.

5. The locking device according to claim 1, characterized in that the teeth and the notches in which the teeth engage are formed to provide a sufficient clearance after engagement to absorb possible small deformations of the locking rings.

6. A method for locking threaded pipe connection units utilizing the locking device according to claim 1, characterized in the following steps:

- screwing the threaded connection units together;
- revolving the first and second locking rings simultaneously to bring the teeth and notches on the second sides of the first and second locking rings into alignment with the corresponding notches and teeth on the shoulders of their corresponding connection units;
- spreading the first and second locking rings partially apart in an axial direction;
- engaging the teeth and notches of the second sides of the locking rings with their corresponding connection units while maintaining the mutual engagement between the teeth and notches of the first sides of the first and second rings; and

- engaging the axial lock, thereby locking the connection units with respect to a rotation between the first and second connection unit.

7. The method according to claim 6, characterized in that the locking rings are manually spread apart in the axial direction, and that engaging the axial lock includes extending one or more locking bolts from one locking ring to the other.

8. The locking device according to claim 1, wherein the first locking ring has an even number of both teeth and notches and the second locking ring has an odd number of both teeth and notches.